What is claimed is:

1. A purified polypeptide comprising SEQ ID NO: 1.

2. A purified polypeptide comprising an amino acid sequence at least about 95% identical to the sequence of SEQ ID NO:1.

3. A purified polypeptide comprising the amino acid sequence of SEQ ID NO:1 with one or more conservative amino acid substitutions.

4. A nucleic acid encoding the polypeptide of claim 1.

5. The nucleic acid of claim 4, wherein the nucleic acid comprises SEQ ID NO: 3

6. A vector comprising the nucleic acid of claim 4 or 5.

7. A host cell comprising the vector of claim 6.

8. The host cell of claim 7, wherein the host cell is a prokaryotic cell.

9. The host cell of claim 8, wherein the prokaryotic cell is an *E. coli* cell.

10. The host cell of claim 7, wherein the host cell is a eukaryotic cell.

11. A purified polypeptide comprising SEQ ID NO: 2.

12. A purified polypeptide comprising an amino acid sequence at least about 95% identical to the sequence of SEQ ID NO:2.

13. A purified polypeptide comprising the amino acid sequence of SEQ ID NO:2 with one or more conservative amino acid substitutions.

14. A nucleic acid encoding the polypeptide of claim 11.

15. The nucleic acid of claim 14, wherein the nucleic acid comprises SEQ ID NO: 4

16. A vector comprising the nucleic acid of claim 14 or 15.

17. A host cell comprising the vector of claim 16.

18. The host cell of claim 17, wherein the host cell is a prokaryotic cell.

19. The host cell of claim 18, wherein the prokaryotic cell is an E. coli cell.

20. The host cell of claim 17, wherein the host cell is a eukaryotic cell.

21. A purified polypeptide comprising SEQ ID NO: 8.

22. A purified polypeptide comprising an amino acid sequence at least about 95% identical to the sequence of SEQ ID NO:8.

23. A purified polypeptide comprising the amino acid sequence of SEQ ID NO:8 with one or more conservative amino acid substitutions.

24. A nucleic acid encoding the polypeptide of claim 21.

25. The nucleic acid of claim 24, wherein the nucleic acid comprises SEQ ID NO: 9

26. A vector comprising the nucleic acid of claim 24 or 25.

27. A host cell comprising the vector of claim 26.

28. The host cell of claim 27, wherein the host cell is a prokaryotic cell.

29. The host cell of claim 28, wherein the prokaryotic cell is an *E. coli* cell.

30. The host cell of claim 27, wherein the host cell is a eukaryotic cell.

31. An isolated antibody or fragment thereof that specifically binds the polypeptide of claim 21.

32. The antibody of claim 31, wherein the antibody is a polyclonal antibody.

33. The antibody of claim 31, wherein the antibody is a monoclonal antibody.

34. The antibody of claim 31, wherein the antibody is labeled with a detectable moiety.

35. The antibody of claim 34, wherein the detectable moiety is selected from the group consisting of a fluorescent moiety, an enzyme-linked moiety, a biotinylated moiety and a radiolabeled moiety.

36. The antibody of claim 31, wherein the antibody is humanized.

37. An isolated antibody or fragment thereof that specifically binds the polypeptide of claim 11.

38. The antibody of claim 37, wherein the antibody is a polyclonal antibody.

39. The antibody of claim 37, wherein the antibody is a monoclonal antibody.

40. The antibody of claim 37, wherein the antibody is labeled with a detectable moiety.

41. The antibody of claim 40, wherein the detectable moiety is selected from the group consisting of a fluorescent moiety, an enzyme-linked moiety, a biotinylated moiety and a radiolabeled moiety.

42. The antibody of claim 37, wherein the antibody is humanized.

43. A method for detecting the presence of cancer in a subject, comprising the steps of:

(a) contacting a biological sample obtained from a subject with at least two oligonucleotide primers, each primer consisting of 10 to 200 contiguous nucleotides of SEQ ID NO: 5 or the complement therof, in a reverse transcriptase polymerase chain reaction; and
(b) detecting in the sample a polynucleotide sequence that amplifies in the presence of said oligonucleotide primers, wherein the presence of an amplified polynucleotide sequence indicates the presence of cancer in the subject.

44. The method of claim 43, wherein the cancer is breast cancer.

45. The method of claim 34, wherein the breast cancer is estrogen dependent breast cancer.

46. The method of claim 33, wherein the primers are forward primer (5'-CAGAGCCTGT-3') (SEQ ID NO: 6) and reverse primer (5'-CTCTGGGACA-3') (SEQ ID NO: 7).

47. A polynucleotide probe comprising a polynucleotide selected from the group consisting of at least 25 contiguous nucleotides of SEQ ID NO: 3, at least 25 contiguous nucleotides of SEQ ID NO: 4, at least 25 contiguous nucleotides of SEQ ID NO: 5 and at least 25 contiguous nucleotides of SEQ ID NO: 9.

48. A method for detecting the presence of cancer in a subject, comprising the steps of:

(a) contacting a biological sample obtained from a subject with the probe of claim 47 under conditions that allow the probe to selectively bind a BRHF1 nucleic acid; and
(b) detecting the presence of a BRHF1 nucleic acid, whereby the presence of a BRHF1 nucleic acid indicates the presence of cancer in

the subject.

49. The method of claim 48, wherein the cancer is breast cancer.

50. The method of claim 49, wherein the breast cancer is estrogen dependent breast cancer.

51. The method of claim 48, further comprising:

d) measuring the amount of BRHF1 nucleic acid in the sample and correlating this amount with a particular stage of cancer.

52. A method of detecting the presence of cancer in a subject comprising:

a) contacting a sample from the subject with an antibody to a BRHF1 polypeptide; and

b) detecting the antibody bound to the BRHF1 polypeptide in the sample, wherein binding of BRHF1 polypeptide to the antibody indicates the presence of a BRHF1 polypeptide in the sample, the presence of a BRHF1 polypeptide indicating the presence of cancer in the subject.

53. The method of claim 52, wherein the cancer is breast cancer.

54. The method of claim 53, wherein the breast cancer is estrogen dependent breast cancer.

55. The method of claim 52 further comprising:

d) measuring the amount of BRHF1 polypeptide in the sample and correlating this amount with a particular stage of cancer.

56. A method of reducing BRHF1 expression in a cell comprising administering to the cell an antisense oligonucleotide that specifically binds to mRNA transcribed from the BRHF1 gene under conditions that allow hybridization, wherein the BRHF1 mRNA comprises a nucleotide sequence selected from

the group consisting of SEQ ID NO: 3, SEQ ID NO 4 and SEQ ID NO: 9 and wherein hybridization of the antisense oligonucleotide with the BRHF1 mRNA reduces BRHF1 expression.

57. A method of reducing BRHF1 expression comprising administering to a cell a ribozyme that specifically binds to mRNA transcribed from the BRHF1 gene, the ribozyme binding reducing BRHF1 expression.

58. A method of reducing BRHF1 expression comprising administering to a cell an siRNA that is complementary to at least a portion of the coding sequence of BRHF1, under conditions that allow hybridization of the siRNA with the BRHF1 coding sequence, wherein the BRHF1 coding sequence comprises a nucleotide sequence selected from the group consisting of SEQ ID NO: 3, SEQ ID NO: 4 and SEQ ID NO: 9, and wherein the binding of the siRNA to the BRHF1 coding sequence reduces BRHF1 expression.

59. The method of claim 56, 57 or 58, wherein the cell is in a subject.

60. A method of identifying a compound that reduces BRHF1 expression, comprising administering a test compound to a cell containing a BRHF1 gene and detecting the level of the BRHF1gene product produced, a decrease in the gene product as compared to a control cell indicating the compound reduces BRHF1 expression.

61. A method of identifying a compound that reduces BRHF1 expression, comprising administering a test compound to a cell containing a nucleic acid encoding the polypeptide of claim 21 and detecting the level of the BRHF1gene product produced, a decrease in the gene product indicating a compound that reduces BRHF1 expression.

62. A method of identifying a compound that reduces BRHF1 expression in the presence of estrogen, comprising administering a test compound and estrogen to a cell containing a BRHF1 gene and detecting the level of the BRHF1gene product produced, a decrease in the gene product as compared

to a control cell indicating a compound that reduces BRHF1 expression in the presence of estrogen.

63. A method of identifying a compound that reduces BRHF1 expression in the presence of estrogen, comprising administering a test compound and estrogen to a cell containing a nucleic acid encoding the polypeptide of claim 21 and detecting the level of the BRHF1gene product produced, a decrease in the gene product indicating a compound that reduces BRHF1 expression in the presence of estrogen.